

WHAT IS CLAIMED IS:

1. A name/address translation device  
comprising:

- 5           a judging unit for judging, when receiving a  
query, transmitted from a communication source,  
about an address corresponding to a name of a  
communication destination, whether a communication  
between the communication source and a  
10 communication destination is permitted or not, on  
the basis of network types to which the  
communication source and the communication  
destination respectively belong;
- a second judging unit for judging based on a  
15 result of the judgment by the judging unit whether  
or not a communication destination address  
corresponding to the name is given as a response to  
the communication source; and
- a response unit for acquiring, when the second  
20 judging unit judges that the address of the  
communication destination is given as the response,  
the address of the communication destination and  
giving the address of the communication destination  
as the response to the communication source.

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2. A name/address translation device  
comprising:

a receiving unit for receiving a query about a communication destination address corresponding to a communication destination name, the query being transmitted from a first network and a second  
5 network;

an identifying unit for identifying networks to which a communication source having transmitted the query and the communication destination respectively belong;

10 a searching unit for searching for an address of the communication destination to be given to the communication source as a response when the communication source belongs to the first network and when the communication destination belongs to  
15 the second network; and

a sending unit for sending the response containing the address of the communication destination,

wherein the sending unit, when the  
20 communication source belongs to the second network and when the communication destination belongs to the first network, does not send the response containing the address of the communication destination.

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3. A name/address translation device according to Claim 2, wherein the sending unit,

when there is no application of which a use is permitted in a communication between the communication source belonging to the first network and the communication destination belonging to the second network, does not give the response of the communication destination address to the communication source.

4. A name/address translation device according to Claim 2 or 3, further comprising notifying unit for notifying a routing device of passage information for letting data pass through that are forwarded between a first terminal and a second terminal, the routing device receiving, when a response of an address of the second terminal corresponding to the communication destination belonging to the second network is given to the first terminal corresponding to the communication source belonging to the first network, pieces of data forwarded between the first network and the second network and letting only the data with its passage permitted pass through, and effecting an address translation between the first network and the second network.

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5. A name/address translation device according to Claim 4, wherein the notifying unit,

when the routing device lets the data transmitted from the second terminal pass through, notifies the routing device of passage information containing an address of the first network that is virtually  
5 assigned to the second terminal and an on-the-second-network address of the second terminal in order to translate the on-the-second-network address of the second terminal that is added as a source address to this piece of data into an on-  
10 the-first network address, and

the sending unit, when the first terminal adds the on-the-first-network address of the second terminal to the data addressed to the second terminal and thus transmits it and when the routing  
15 device lets the data addressed to the second terminal pass through, sends a response containing the one-the-first-network address of the second terminal in order to translate the destination address added to this piece of data into the on-  
20 the-second-network address of the second terminal.

6. A name/address translation device according to Claim 4 or 5, wherein the notifying unit notifies the routing device of the passage  
25 information further containing information about an application of which the utilization is permitted in the communication between the first terminal and

the second terminal in order for the routing device to let only the data pass through which is based on the application of which the utilization is permitted between the first terminal and the second  
5 terminal.

7. A name/address translation device according to any one of Claims 4-6, wherein the notifying unit notifies, before the sending unit  
10 sends the address of the second terminal, the routing device of the passage information.

8. A name/address translation method making a computer functioning as a name/address translation  
15 device, execute:

a judging step of judging, when receiving a query, transmitted from a communication source, about an address corresponding to a name of a communication destination, whether a communication  
20 between a communication source and a communication destination is permitted or not, on the basis of network types to which the communication source and the communication destination respectively belong;

a second judging step of judging based on a  
25 result of the judgment in the judging step whether or not a communication destination address corresponding to the name is given as a response to

the communication source; and

5 a response step of acquiring, when it is judged in the second judging step that the address of the communication destination is given as the response, the address of the communication destination and giving the address of the communication destination as the response to the communication source.

10 9. A name/address translation method making a computer functioning as a name/translation device, execute:

15 a receiving step of receiving a query about a communication destination address corresponding to a communication destination name, the query being transmitted from a first network and a second network;

20 an identifying step of identifying networks to which a communication source having transmitted the query and the communication destination respectively belong;

25 a searching step of searching for an address of the communication destination to be given to the communication source as a response when the communication source belongs to the first network and when the communication destination belongs to the second network; and

a sending step of sending the response containing the address of the communication destination,

wherein when the communication source belongs  
5 to the second network and when the communication destination belongs to the first network, the response containing the address of the communication destination is not sent.

10 10. A name/address translation method according to Claim 9, wherein the computer, when there is no application of which a use is permitted in a communication between the communication source belonging to the first network and the  
15 communication destination belonging to the second network, does not give the response of the communication destination address to the communication source.

20 11. A name/address translation method according to Claim 9 or 10, wherein the computer further executes a notifying step of notifying a routing device of passage information for letting data pass through that are forwarded between a  
25 first terminal and a second terminal, the routing device receiving, when a response of an address of the second terminal corresponding to the

communication destination belonging to the second network is given to the first terminal corresponding to the communication source belonging to the first network, pieces of data forwarded  
5 between the first network and the second network and letting only the data with its passage permitted pass through, and effecting an address translation between the first network and the second network.

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12. A name/address translation method according to Claim 11, wherein the computer, when the routing device lets the data transmitted from the second terminal pass through, notifies the  
15 routing device of passage information containing an address of the first network that is virtually assigned to the second terminal and an on-the-second-network address of the second terminal in order to translate the on-the-second-network  
20 address of the second terminal that is added as a source address to this piece of data into an on-the-first network address, and

the computer, when the first terminal adds the on-the-first-network address of the second terminal  
25 to the data addressed to the second terminal and thus transmits it and when the routing device lets the data addressed to the second terminal pass



through, sends a response containing the one-the-  
first-network address of the second terminal in  
order to translate the destination address added to  
this piece of data into the on-the-second-network  
5 address of the second terminal.

13. A name/address translation method  
according to Claim 11 or 12, wherein the computer  
notifies the routing device of the passage  
10 information further containing information about an  
application of which the utilization is permitted  
in the communication between the first terminal and  
the second terminal in order for the routing device  
to let only the data pass through which is based on  
15 the application of which the utilization is  
permitted between the first terminal and the second  
terminal.

14. A name/address translation method  
20 according to any one of Claims 11-13, wherein the  
computer notifies, before sending the address of  
the second terminal, the routing device of the  
passage information.

25 15. A program making a computer function as a  
name/address translation device or a recording  
medium recorded with this program, making the

computer execute:

- 5 a judging step of judging, when receiving a query, transmitted from a communication source, about an address corresponding to a name of a communication destination, whether a communication between a communication source and a communication destination is permitted or not, on the basis of network types to which the communication source and the communication destination respectively belong;
- 10 a second judging step of judging based on a result of the judgment in the judging step whether or not a communication destination address corresponding to the name is given as a response to the communication source; and
- 15 a response step of acquiring, when it is judged in the second judging step that the address of the communication destination is given as the response, the address of the communication destination and giving the address of the
- 20 communication destination as the response to the communication source.

16. A program making a computer function as a name/address translation device or a recording medium recorded with this program, making the computer execute:

- a receiving step of receiving a query about a

communication destination address corresponding to a communication destination name, the query being transmitted from a first network and a second network;

5            an identifying step of identifying networks to which a communication source having transmitted the query and the communication destination respectively belong;

            a searching step of searching for an address  
10 of the communication destination to be given to the communication source as a response when the communication source belongs to the first network and when the communication destination belongs to the second network; and

15           a sending step of sending the response containing the address of the communication destination,

            wherein when the communication source belongs to the second network and when the communication  
20 destination belongs to the first network, a step of not sending the response containing the address of the communication destination is executed.

            17. A program or a recording medium recorded  
25 with this program according to Claim 16, wherein the computer, when there is no application of which a use is permitted in a communication between the

communication source belonging to the first network  
and the communication destination belonging to the  
second network, executes a step of judging that the  
response of the communication destination address  
5 is not given to the communication source.

18. A program or a recording medium recorded  
with this program according to Claim 16 or 17,  
wherein the computer further executes a notifying  
10 step of notifying a routing device of passage  
information for letting data pass through that are  
forwarded between a first terminal and a second  
terminal, the routing device receiving, when a  
response of an address of the second terminal  
15 corresponding to the communication destination  
belonging to the second network is given to the  
first terminal corresponding to the communication  
source belonging to the first network, pieces of  
data forwarded between the first network and the  
20 second network and letting only the data with its  
passage permitted pass through, and effecting an  
address translation between the first network and  
the second network.

25 19. A program or a recording medium recorded  
with this program according to Claim 18, wherein  
the computer, when the routing device lets the data

transmitted from the second terminal pass through,  
executes:

a step of notifying the routing device of  
passage information containing an address of the  
5 first network that is virtually assigned to the  
second terminal and an on-the-second-network  
address of the second terminal in order to  
translate the on-the-second-network address of the  
second terminal that is added as a source address  
10 to this piece of data into an on-the-first network  
address, and

a step of, when the first terminal adds the  
on-the-first-network address of the second terminal  
to the data addressed to the second terminal and  
15 thus transmits it and when the routing device lets  
the data addressed to the second terminal pass  
through, sending a response containing the one-the-  
first-network address of the second terminal in  
order to translate the destination address added to  
20 this piece of data into the on-the-second-network  
address of the second terminal.

20. A program or a recording medium recorded  
with this program according to Claim 18 or 19,  
25 wherein the computer executes a step of notifying  
the routing device of the passage information  
further containing information about an application

of which the utilization is permitted in the  
communication between the first terminal and the  
second terminal in order for the routing device to  
let only the data pass through which is based on  
5 the application of which the utilization is  
permitted between the first terminal and the second  
terminal.

21. A program or a recording medium recorded  
10 with this program according to any one of Claims  
18-20, wherein the computer executes a step of  
notifying, before sending the address of the second  
terminal in the sending step, the routing device of  
the passage information.

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